REMARKS

Claims 1-44 are pending.

In the Office Action dated February 14, 2008 (the "Office Action") the Examiner provisionally rejected claims 1, 6, 14, 22, 30, 39, and 45, on the ground of nonstatutory double patenting over claims of copending Application No. 11/433,131 to James. The Examiner further rejected claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,982,485 to Holmberg et al. (the "Holmberg patent") and rejected claims 6 and 7 under 35 U.S.C. 102(b) as anticipated, or in the alternative, under U.S.C. 103(a) as being obvious over the Holmberg patent. Claims 3-5 and 8-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Holmberg patent in view of U.S. Patent No. 4,078,228 to Miyazaki (the "Miyazaki patent"). Claims 15-21, 23-29, 31-38 and 40-44 were objected to as being dependent upon a rejected base claims, but would be allowable if rewritten in independent form.

With respect to the Examiner's rejection of claims 1, 6, 14, 22, 30, 39, and 45, on the ground of nonstatutory double patenting, a terminal disclaimer will be submitted upon the resolution of all other claim rejections.

As previously mentioned, claims 1 and 2 have been rejected under 35 U.S.C. 102(b) as being anticipated by the Holmberg patent.

The Holmberg patent is directed to a computer network system that utilizes measurement devices for taking weight measurements, for example of an airplane, and to convert the measurements into digital signals. The computer network system includes a master node 11 coupled to a plurality of slave nodes 12A-12N interconnected by communication links 13A-13(N+1) in a ring formation. See col. 2, lines 32-47. The communication links 13A-13(N+1) are used to transmit messages from the master node 11 around the ring in one direction (counter-clockwise, as shown in Figure 1). See col. 2, lines 47-51. In operation, the master node 11 first transmits an auto-address message 40 so that a count of the number of slave nodes 12A-12N can be made and each has a respective address assigned. See col. 5, line 61-col. 6, line 25. The auto-address message is passed from one slave node to another around the ring until the last slave node 12N transmits the modified auto-address message to the master node 11. See id. The master node 11 then transmits a network parameters message 50 to each of the slave nodes 12A-12N over the communication links 13A-13(N+1) indicating the number of slave nodes in the

ring, among other things. See col. 6, line 34-col. 7, line 2. Finally, to initiate measurement, the master node 11 transmits a synchronizing message 60 that is used by each of the slave nodes 12A-12N to determine how long to wait before taking a weight measurement. As the synchronizing message 60 is passed from one slave node to the next (and finally back to the master node 11 from the last slave node 12N), a respective delay is calculated based on the respective slave nodes' address (assigned by the transmission of the auto-address message 40). See col. 7, lines 15-33. The first slave node 12A has the longest delay and the last slave node 12N has the shortest delay. In this manner, all of the slave nodes 12A-12N can begin measuring at the same time rather than when the synchronizing message 60 was received.

Claim 1 is patentably distinct from the Holmberg patent because the Holmberg patent fails to describe the combination of limitations recited by claim 1. For example, the Holmberg patent fails to disclose a method of synchronizing communication links in a memory system including a system controller and a plurality of memory hubs coupled in series, with pairs of downstream and upstream links being coupled between adjacent modules and the controller. As previously discussed, the Holmberg patent teaches a computer network system for taking measurements that includes a plurality of slave nodes 12A-12N coupled in a ring to a master node 11 through a communications link 13A-13(N+1). The communication links 13A-13(N+1) are unidirectional links where messages are sequentially transmitted from the master node 11 to all of the slave nodes 12A-12N in one direction. None of the messages transmitted by the master node 11 makes their way back "upstream" through the chain of slave nodes 12A-12N because there are no communications links for upstream communications. The messages do get back to the master node 11, but by way of the last slave node 12N after being transmitted in one direction through each slave node. In contrast, claim 1 recites "pairs of downstream and upstream links being coupled between adjacent modules and the controller." The Holmberg patent, however, only teaches a downstream link 13A-13(N+1) coupled between adjacent modules and the controller. As previously described, messages from the master node 11 are transmitted in one direction over the ring of slave nodes 12A-12N.

Moreover, the Holmberg patent fails to disclose sequentially synchronizing upstream links starting with the upstream link coupled between the last memory hub and the next upstream hub. In the computer network system described in the Holmberg patent, the last slave

node 12N is coupled to provide messages back to the master node 11 over communications link 13(N+1). Applying the Examiner's characterization of the master node 11 as representing the "controller" of claim 1 (see the Office Action at page 10), the Holmberg patent cannot disclose sequentially synchronizing upstream links starting with the upstream link coupled between the last memory hub (slave node 12N) and the next upstream hub (slave node (N-1)). No messages are ever transmitted in the clockwise direction (i.e., to "the next upstream hub") since all messages move in only one direction through the ring (i.e., to a downstream slave node), namely, counter-clockwise from slave node 12A to slave node 12N before getting back to the master node 11. Even if the perspective of the link is switched from downstream to upstream, that is, an upstream communications link 13A couples the first slave node 12A to the master node 11, and another upstream communications link 13B couples the second slave node 12B to the first slave node 12A, the Holmberg technique would "synchronize upstream links" starting with the upstream link between the first slave node 12A and the master node 11 and not synchronize upstream links starting with the upstream link coupled between the last memory hub and the next memory hub, as recited in claim 1.

For the foregoing reasons, claim 1 is patentably distinct from the Holmberg patent. Claim 2 is similarly patentably distinct based on its dependency from allowable base claim 1. Therefore, the Examiner's rejection of claims 1 and 2 under 35 U.S.C. 102(b) should be withdrawn.

As previously mentioned, claims 6 and 7 have been rejected under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as being unpatentable over the Holmberg patent.

Claim 6 recites a method of synchronizing communications links in a memory hub system including a system controller and a plurality of memory hubs coupled in series, with pairs of downstream and upstream links being coupled between adjacent modules and the controller. The method includes, among other things, in a clockwise order starting with the downstream link coupled between the controller and the first memory module, signaling to the next adjacent clockwise link that the prior clockwise link has been synchronized, detecting through the upstream link coupled between the controller and the first memory module and when all links have been synchronized, in a clockwise order starting with the downstream link coupled

between the controller and the first memory module, enabling each link, and detecting through the upstream link coupled between the controller and the first memory module when all links have been enabled.

Claim 6 is patentable over the Holmberg patent because the Holmberg patent fails to teach or suggest the combination of limitations recited by claim 6. For example, the Holmberg patent fails to teach or suggest synchronizing communications links in a memory hub system including a system controller and a plurality of memory hubs coupled in series, with pairs of downstream and upstream links being coupled between adjacent modules and the controller. As previously discussed with respect to claim 1, the Holmberg patent teaches unidirectional communications links 13A-13(N+1) that couple the slave nodes 12A-12N to the master node 11. Messages are transmitted in only one direction, from the first slave node 12A to the last slave node 12N before getting back to the master node 11.

The Holmberg patent further fails to teach or suggest detecting through the upstream link coupled between the controller and the first memory module and when all links have been synchronized. The master node 11 is responsive to receiving messages over the last communications link 13(N+1) between the master node 11 and the last slave node 12A. The "upstream link" (looking back to the master node 11 from the perspective of the first slave node 12A) coupled between the master node 11 and the first slave node 12A is the first communications link to be "synchronized" (to the extent that Holmberg teaches synchronizing at all). All the remaining communications links 13B-13(N+1) have yet to be synchronized. As a result, the Holmberg patent does not teach or suggest detecting when all links have been synchronized through an upstream link coupled between the controller and first memory module. The master node 11, as previously discussed, detects completion of "synchronization" when a message is transmitted to it from the *last* slave node 12N over the *last* communications link 13(N+1) (which, as all of the communications links 13A-13(N+1), are downstream links). The reason the system taught in the Holmberg patent relies on the last slave node 12N is because the communications links 13A-13(N+1) are unidirectional, and messages are transmitted in only one direction around the ring of slave nodes 12A-12N. No messages are ever transmitted upstream over the communications links 13A-13(N+1).

Additionally, no one ordinarily skilled in the art would modify the teachings of the Holmberg patent to utilize pairs of downstream and upstream links coupled between the slave nodes 12A-12N and the master node 11 because modifying the teachings of the Holmberg patent would render the computer network system inoperable for its intended purpose, and moreover, the Holmberg patent teaches away from using such an arrangement. The transmission of messages from the master node 11 to the slave nodes 12A-12N is described as being in one direction. The addressing and the timing of the delays for the slave nodes 12A-12N is based on transmitting the messages sequentially through the slave nodes 12A-12N in one direction. To transmit any information "upstream" would be contrary to the basic operation described in the Holmberg patent.

For the foregoing reasons, claim 6 is patentable over the Holmberg patent. Claim 7 is similarly patentable based on its dependency from allowable base claim 6. Therefore, the Examiner's rejection of claims 6 and 7 under 35 U.S.C. 103(a) should be withdrawn.

As previously mentioned, claims 3-5 and 8-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Holmberg patent in view of the Miyazaki patent.

Claims 3-5, which depend from claim 1, and claims 8-13, which depend from claim 6, are patentable based on their dependency from a respective allowable base claim. Moreover, the teachings of the Miyazaki patent do not make up for the deficiencies of the Holmberg patent, previously discussed.

For the foregoing reasons, claims 3-5 and 8-13 are patentable over the Holmberg patent in view of the Miyazaki patent. The Examiner's rejection of these claims under 35 U.S.C. 103(a) should be withdrawn.

All of the claims pending in the present application are in condition for allowance. Favorable consideration and a timely Notice of Allowance are earnestly solicited.

Respectfully submitted,

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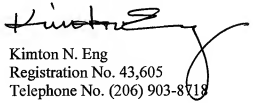

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